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IS 2826 (1986): Dimensions and tolerances for copper and copper alloy rods and bars for general engineering purposes [MTD 8: Copper and Copper Alloys]



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Indian Standard

DIMENSIONS AND TOLERANCES FOR COPPER AND COPPER ALLOY RODS AND BARS FOR GENERAL ENGINEERING PURPOSES

(Third Revision)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

DIMENSIONS AND TOLERANCES FOR COPPER AND COPPER ALLOY RODS AND BARS FOR GENERAL ENGINEERING PURPOSES

(Third Revision)

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Indian Standard

DIMENSIONS AND TOLERANCES FOR COPPER AND COPPER ALLOY RODS AND BARS FOR GENERAL ENGINEERING PURPOSES

(Third Revision)

0. FOREWORD

0.1 This Indian Standard (Third Revision) was adopted by the Indian Standards Institution on 25 November 1986, after the draft finalized by the Copper and Copper Alloys Sectional Committee had been approved by the Structural and Metals Division Council.

0.2 This standard was published in 1964 and subsequently revised in 1974 and 1980. In this revision, the tolerances on diameter 6 to 10 mm of rods and bars have been included.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated expressing the result of a test or analysis, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard specifies dimensions and tolerances for copper and copper alloy rods and bars.

2. TERMINOLOGY

2.0 For the purpose of this standard, the definitions as given in IS : 3288 (Part 3)-1986† shall apply.

*Rules for rounding off numerical values (*revised*).

†Glossary of terms relating to copper and copper alloys: Part 3 Wrought forms.

2.1 Rod/Bar — A solid wrought product of uniform cross section along its whole length, supplied in straight length or coil form, whose width or greatest distance between parallel faces is greater than 6 mm.

3. DIMENSIONS AND TOLERANCES

3.1 Thickness of Rods/Bars — The preferred thickness of rectangular rods and bars shall be 11, 12, 14, 16, 18, 20, 22, 25, 28, 32, 36, 40, 45 and 50 mm.

3.2 Dimensions and tolerances for finished rods and bars shall be as given in Table 1, 2, 3, and 4 and those for hot worked rods and bars shall be as given in Table 5.

3.2.1 Where specially required, tolerances other than those specified in this standard may be agreed to between the purchaser and the supplier.

3.2.2 If sizes required, for which tolerances are not given in Table 1 to 5, the tolerances shall be as agreed to between the supplier and the purchaser.

TABLE 1 DIMENSIONS AND TOLERANCES ON ROUND RODS AND BARS

(Clause 3.2)

All dimensions in millimetres.

DIAMETER		NORMAL TOLERANCE	CLOSE TOLERANCE
Over	Up to and Including		
(1)	(2)	(3)	(4)
6	10	± 0.05	$- 0.05$
10	20	± 0.10	$- 0.05$
20	30	± 0.15	$- 0.08$
30	50	± 0.20	$- 0.10$
50	70	± 0.75 percent	± 0.5 percent
70	100	± 1.5 percent	± 0.75 percent
100		± 2.5 percent	± 1.5 percent

TABLE 2 DIMENSIONS AND TOLERANCES OF SQUARE RODS AND BARS

(Clause 3.2)

All dimensions in millimetres.

WIDTH ACROSS FLATS		NORMAL TOLERANCE	CLOSE TOLERANCE
Over	Up to and Including		
(1)	(2)	(3)	(4)
6	10	± 0.09	$- 0.05$
10	20	± 0.13	$- 0.10$
20	30	± 0.18	$- 0.13$
30	40	± 0.23	$- 0.15$
40	70	± 1.0 percent	± 0.75 percent
70	100	± 2.0 percent	± 1.5 percent
100		± 3.0 percent	± 2 percent

TABLE 3 DIMENSIONS AND TOLERANCES OF RECTANGULAR RODS AND BARS

(Clause 3.2)

All dimensions in millimetres.

WIDTH ACROSS FLATS		TOLERANCE ON WIDTH	TOLERANCE ON THICKNESS			
Over	Up to and Including		On Thick- ness up to and Includ- ing 12	On Thick- ness Over 12 up to and Including 20	On Thick- ness Over 20 up to and Including 40	On Thick- ness Over 40 up to and Includ- ing 50
(1)	(2)	(3)	(4)	(5)	(6)	(7)
6	10	± 0.15	± 0.10	—	—	—
10	20	± 0.20	± 0.15	± 0.20	—	—
20	40	± 0.25	± 0.20	± 0.25	± 0.25	—
40	50	± 1 percent	± 0.20	± 0.25	± 0.30	± 0.40
50	70	± 1 percent	± 0.40	± 0.45	± 0.50	± 0.50
70	100	± 2 percent	± 0.50	± 0.60	± 0.80	± 0.80
100		± 2.5 percent	± 0.60	± 0.75	± 1.0	± 1.0

**TABLE 4 DIMENSIONS AND TOLERANCES OF
HEXAGONAL RODS AND BARS**

(Clause 3.2)

All dimensions in millimetres.

WIDTH ACROSS FLATS		NORMAL TOLERANCE*	*CLOSE TOLERANCE
Over	Up to and Including		
(1)	(2)	(3)	(4)
6	10	- 0.10	- 0.08
10	20	- 0.20	- 0.10
20	30	- 0.25	- 0.13
30	40	- 0.30	- 0.15
40	50	- 0.40	- 0.20
50	70	- 0.50	- 0.25
70	100	- 2 percent	- 1.5 percent
100		- 3 percent	- 2.0 percent

*Plus tolerance shall be 0.00 mm.

**TABLE 5 DIMENSIONS AND TOLERANCES OF HOT
WORKED RODS AND BARS**

(Clause 3.2)

All dimensions in millimetres.

DIAMETER/WIDTH ACROSS FLATS		TOLERANCE
Over	Up to and Including	
(1)	(2)	(3)
6	10	± 0.20
10	25	± 0.50
25	50	± 0.75
50	70	± 1.25
70	90	± 1.75
90		± 3.0

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